

**REMARKS**

This is in response to the Office Action mailed April 3, 2009 and the Advisory Action mailed August 12, 2009. Applicants thank the Examiner for the telephonic interview of August 21, 2009, during which various issues were discussed. It is Applicants' understanding that the Examiner would provide the Interview Summary.

After entry of this amendment, claims 2, 4-5 and 32-37 are pending. Applicants hereby request non-entry of the previously filed unentered amendments and request that the amendments above be entered. Claims 1, 3, 6-13, 16-21, 25 and 27-31 have been cancelled without prejudice or disclaimer. New claims 33-37 have been added and find support *inter alia* in the original claims. New claims 33-36 find further support in the specification at page 158, lines 10-12. Claim 2 has been amended without prejudice or disclaimer and finds support *inter alia* in the original claims. Further support is found in the specification, for example, at page 20, line 35 through page 21, line 6, page 77, line 10, page 81, line 17, and page 174, Table 1. No new matter has been added.

Applicants enclose herewith a Request for Continued Examination requesting entry of the above claim amendment and consideration of the present remarks. The above claim amendment and following remarks address the rejections in the Final Office Action dated April 3, 2009 and also the comments in the Advisory Action mailed August 12, 2009.

**Claim Rejection – 35 USC § 112, First Paragraph**

Claims 2-5 and 31-32 are rejected under 35 U.S.C. § 112, first paragraph, for allegedly lack of adequate written description support. Applicants respectfully disagree. However, to expedite prosecution, the claims have been amended without prejudice or disclaimer to recite the process and the nucleic acid molecule with more specificity. Applicants respectfully submit that the claims as amended overcome the rejection for the following reasons.

It is noted initially that the specification describes the sequence of SEQ ID NO: 1 that encodes SEQ ID NO: 2 by its actual structure (i.e. sequences). Because the genetic code and its redundancies were known in the art at the time of filing, the disclosure of SEQ ID NO: 2, combined with the pre-existing knowledge in the art, would have put one in possession of the genus of nucleic acids that encodes SEQ ID NO: 2. With the aid of a computer, one skilled in

the art could have identified all of the nucleic acids that encode a polypeptide with at least 95% identity with SEQ ID NO: 2. Thus, one of ordinary skill in the art would conclude that Applicants were in possession of the claimed genus at the time the application was filed.

Furthermore, as described in the specification at page 83, lines 14-18 and 24-29, natural allelic variations (e.g. DNA sequence polymorphisms) can lead to alternations in the amino acid sequence of SEQ ID NO: 2 within a population, bring about a variation of 1-5% in the nucleotide sequence of the gene encoding SEQ ID NO: 2 without altering the functional activity of the protein. Accordingly, the claim scope created by the recitation of at least 95% sequence identity includes the expected range of natural polymorphic variants, which should certainly within the scope of the invention.

For at least the above reasons and in light of the present amendment, it is respectfully submitted that the specification provides adequate written description for the present claims as amended. Accordingly, reconsideration and withdrawal of the rejection is respectfully requested.

**Claim Rejection – 35 USC § 112, Second Paragraph**

Claims 2, 3-5 and 31-32 are rejected under 35 U.S.C. § 112, second paragraph, for allegedly being incomplete for omitting an essential step. Applicants respectfully disagree. However, to expedite prosecution, the claims have been amended without prejudice or disclaimer to recite the claimed process with more specificity. As amended, claim 2 recites a step of introducing the nucleic acid molecule into the organism or part thereof to further clarify the method by which the increasing or generating of expression is accomplished. Additionally, claim 2, as amended, further recites a step of recovering the fine chemical so produced from the organism or part thereof. Applicants believe the claims as amended overcome the rejection. Accordingly, reconsideration and withdrawal of the rejection is respectfully requested.

**Claim Rejection – 35 U.S.C. § 102(b)**

Claims 2, 3, 5 and 31-32 are rejected under 35 U.S.C. § 102(b) as being anticipated by Qadota *et al.* (hereinafter “Qadota”). Applicants respectfully disagree. However, to expedite prosecution, the claims have been amended without prejudice or disclaimer to recite the fine chemical or the organism with more specificity. Applicants respectfully submit that the claims as amended overcome the rejection for the following reasons.

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegall Bros., Inc. v. Union Oil Co.*, 814 F.2d 628, 631 (Fed. Cir. 1987). “We thus hold that unless a reference discloses within the four corners of the document not only all the limitations claimed but also all of the limitations arranged or combined in the same way as recited in the claim, it cannot be said to prove prior invention of the thing claimed and, thus, cannot anticipate under 35 U.S.C. § 102.” *Net MoneyIN Inc. v. VeriSign Inc.*, 545 F.3d 1359 (Fed. Cir. 2008).

The Examiner asserts that Qadota teaches increasing or generating the expression of SEQ ID NO: 1 in yeast and recovering a free or bound fine chemical (i.e. the RAS2 protein), which anticipates the present claims. Applicants disagree. However, in order to expedite prosecution, claim 2 has been amended without prejudice or disclaimer to recite the fine chemical produced by the claimed process with more specificity. As amended, the fine chemical produced by the claimed process is selected from the group consisting of amino acids, carbohydrates, vitamins, organic acids, fatty acids, and carotenoids. Since a protein, by its very definition, is not an amino acid, a carbohydrate, a vitamin, an organic acid, a fatty acid, or a carotenoid, Qadota does not anticipate the claims as now amended.

Moreover, Applicants note that new claim 35 defines the organisms as being bacteria, fungi, algae, non-human animals or plants. Because Qadota does not teach increasing or generating the expression of a nucleic acid molecule in bacteria, fungi, algae, non-human animals or plants, Qadota does not anticipate the new claims.

Because Qadota does not teach all the claim limitations, Qadota does not anticipate the claims as amended. Accordingly, reconsideration and withdrawal of the rejection is respectfully requested.

#### Claim Rejection – 35 U.S.C. § 103

Claim 4 is rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Qadota in view of Monaghan *et al.* (hereinafter “Monaghan”). Applicants respectfully disagree and traverse for the reasons already of record and additionally for the following reasons.

The Examiner bears the initial burden of establishing *prima facie* obviousness. See *In re Rijckaert*, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993). Further, to support a

*prima facie* conclusion of obviousness, the prior art must disclose or suggest all the limitations of the claimed invention. See *In re Lowry*, 32 F.3d 1579, 1582, 32 USPQ2d 1031, 1034 (Fed. Cir. 1994).

The Examiner relies on Qadota for allegedly teaching increasing or generating the expression of SEQ ID NO: 1 in yeast and recovering a free or bound fine chemical, i.e., a protein. The Examiner acknowledges that Qadota does not teach the steps recited in claim 4, but relies on Monaghan for such teaching. However, as discussed above, the claims as amended recite the fine chemical as being selected from the group consisting of amino acids, carbohydrates, vitamins, organic acids, fatty acids, and carotenoids. Since Qadota does not teach or suggest a process for the production of such fine chemicals, and the reliance on Monaghan is only for its teaching of additional steps as recited in claim 4, the combination of Qadota and Monaghan would not render the claimed process as amended *prima facie* obvious.

The Examiner further refers to the Office Action dated July 28, 2008 for the reasons to support the obviousness rejection. In the Office Action dated July 28, 2008, the Examiner alleges that it would have been obvious

“to make and select mutants of *Saccharomyces cerevisiae* that have an increased activity or expression level of *Saccharomyces cerevisiae* RHO2 protein, given that the RHO2 protein and coding were known at the time the invention was made (as evidenced by Qadota H. et al.), and given that methods for making and selecting mutants were well established in the art at the time the invention was made (as evidenced by Monaghan E. et al.). One skilled in the art would have been motivated to do so in order to functionally characterize the *Saccharomyces cerevisiae* RHO2 protein.” (Office Action at page 12).

A statement that modifications of the prior art to meet the claimed invention would have been “well within the ordinary skill of the art at the time the claimed invention was made” because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references. *Ex parte Levingood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993). See MPEP § 2143.01 IV. “[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385, 1396 (2007) quoting *In re Kahn*, 441 F.3d 977, 988, (Fed. Cir. 2006) (“[A] patent composed of several elements is not

proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. . . . it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements *in the way the claimed new invention does.*” (emphasis added). Furthermore, the Examiner cannot selectively pick and choose from the disclosed parameters without proper motivation as to a particular selection. The mere fact that a reference may be modified to reflect features of the claimed invention does not make the modification, and hence the claimed invention, obvious unless the prior art suggested the desirability of such modification. *In re Mills*, 916 F.2d 680, 682, 16 USPQ2d 1430 (Fed. Cir. 1990); 16 *In re Fritch*, 23 USPQ2d 1780 (Fed. Cir. 1992). Thus, it is impermissible to simply engage in a hindsight reconstruction of the claimed invention where the reference itself provides no teaching as to why the applicant’s combination would have been obvious. *In re Gorman*, 933 F.2d 982, 987, 18 USPQ2d 1885, 1888 (Fed. Cir. 1991).

The modifications proposed by the Examiner appear to substitute the Lcb1/Lcb2 gene products for the Rho2 gene products of Qadota in the method of Monaghan, without any explanations or rational for such substitutions. Simply stating that because both the method and the protein were known, it would be obvious to use the method of Monaghan for expression of the protein disclosed in Qadota, lacks the specificity to support a legal conclusion of obviousness. The Examiner alleges that there does not have to be a connection between Rho2 and Lcb1/Lcb2 to render the claimed invention obvious. KSR still requires “a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements *in the way the claimed new invention does.*” Because the requisite explanation or rational has not been provided, a *prima facie* case of obviousness has not been established for this additional reason. Furthermore, because nothing in the references suggests to one of skill in the art the desirability for the substitution or combination suggested by the Examiner, Qadota and Monaghan are not combinable.

Even assuming *arguendo* the references were combinable and that such substitutions were made, because the references do not teach or suggest all the limitations of the present claims, the resulting process would still not arrive at the process for production of the fine chemicals as presently claimed.

For at least the above reasons, and further in view of the present amendment, reconsideration and withdrawal of the rejection is respectfully requested.

**CONCLUSION**

For at least the above reasons, Applicants respectfully request withdrawal of the rejections and allowance of the claims. If any outstanding issues remain, the Examiner is invited to telephone the undersigned at the number given below.

Applicants reserve all rights to pursue the non-elected claims and subject matter in one or more divisional applications, if necessary.

Accompanying this response is a Request for Continued Examination and a petition for a two-month extension of time to respond to the Office Action mailed April 3, 2009 with the required fee authorization. No further fee is believed due. However, if any additional fee is due, the Director is hereby authorized to charge our Deposit Account No. 03-2775, under Order No. 12810-00197-US from which the undersigned is authorized to draw.

Respectfully submitted,

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